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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,979	10/10/2003	Mark E. Kuznetsov	1058us2	2975
25263	7590	05/24/2006	EXAMINER	
J GRANT HOUSTON AXSUN TECHNOLOGIES INC 1 FORTUNE DRIVE BILLERICA, MA 01821			VY, HUNG T	
			ART UNIT	PAPER NUMBER
			2163	

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/683,979	Applicant(s) KUZNETSOV, MARK E.	
	Examiner Hung T. Vy	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 4/14/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-19, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-19 and 28-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. As of entry of the amendment filed on 4/14/2006, claims 12-19, 28, and 29 are pending in this application as result of cancellation of the claim 20 and adding the new claim 29.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-19 and 28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims (see table below) of copending Application No. 10/909,108.

Present invention claims	Copending application
Claim 12-19 and 28	1-9

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in present application are similar to claims in co-pending application as shown.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 12, 18-19 and 28 are rejected under 35 U. S. C. § 102 (b) as being anticipated by Hendow et al. (U.S. Patent No. 5,418,641).

With respect to claim 12, and 28, Hendow et al. discloses an optical resonator comprising at least one optical cavity defined by at least two mirror (21, 22) structure in which at least one of the mirror structures has a mirror profile having a diameter and sag (the focal of the mirror) that are selected in combination with a length of the cavity to degrade a stability of transverse modes with mode numbers 4 or greater with transverse mode as TEM₀₀ (See column 7, line 67-68).

With respect to claims 18-19, Hendow et al. disclose different length cavity (See column 8, line 5-25) so it is inherent that Hendow et al. teaches an optical distance between the mirror structures is tunable and tunable by out-of-plane deflection of one of the mirror (See fig. 7).

5. Claims 12 and 28 are rejected under 35 U. S. C. § 102 (b) as being anticipated by Baird et al. (U.S. Patent No. 5,317,447).

With respect to claims 12 and 28, Baird et al. discloses an optical resonator comprising at least one optical cavity defined by at least two mirror (108, 120) structure in which at least one of the mirror structures has a mirror profile having a diameter and

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sag that are selected in combination with a length of the cavity to degrade a stability of transverse modes with mode numbers 4 or greater with transverse mode as TEM₀₀ (See column 10, line 29-41).

Claim Rejections - 35 U.S.C. § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13-17 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Baird et al. (U.S. Patent No. 5,317,447) or Hendow et al. (U.S. Patent No. 5,418,641).

With respect to claims 13-17, Baird et al. or Hendow et al. disclose all the limitations of claimed invention recited in claim 12 except for different length of cavity, the sag mirror and the width of mirror. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have different range of cavity, the sag and the width of mirror, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. (Refer to Lee et al. (U.S. Pat. 4,803,694) which disclose different the sag value of the mirror (See table 1) and Tayebati et al. (U.S. Pat. 6,645,784) which discloses the cavity length a (see fig. 1).

Response to Arguments

8. Applicant's arguments filed on 04/14/2006 have been fully considered but they are not persuasive. Applicant made the following arguments:

- i. "Claim 12 and new claim 28 concern the feature in which the diameter and sag in combination with a length of the cavity degrade a stability of transverse modes. Hendow does not concern inducing transverse mode instability but instead seeks to have the modes correspond in frequency. Moreover, these claims dictate that the sag and diameter are used to create instability. Hendow does not appreciate the diameter dependency on transverse mode stability. Thus there is no anticipation." page 5, fifth paragraph.
- ii. "These rejections are respectfully traversed for the following reasons: Similar to Hendow, Baird does not appreciate the diameter dependency on transverse mode stability. The noted portion of Baird is simply directed to the focus of the pump beam for low threshold operation", page 5, last paragraph.

In response to Applicant's argument I above, the applicant's argument are not persuasive because Hendow et al. discloses the diameter and sag are used to create instability (see fig. 4 with R1, R2 or equation 5).

In response to Applicant's argument II above, the applicant's argument are not persuasive because Baird et al. discloses the diameter and sag are used to create instability (column 10, line 29-41).

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12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Conclusion


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung T. Vy whose telephone number is 571-2721954. The examiner can normally be reached on 8.30am - 5.30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571 272 1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hung T. Vy
Art Unit 2821
April 21, 2006.



WILSON LEE
PRIMARY EXAMINER